

Patient information from BMJ

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Endocarditis

If you have endocarditis, the inner lining of your heart is inflamed (swollen). This usually happens because of an infection. Endocarditis can be life-threatening. However, treatment with medicines and sometimes surgery can get rid of the infection and help your heart to recover.

What is endocarditis?

Endocarditis usually happens when germs from another part of your body enter your bloodstream (for example, through a cut in your mouth) and cause an infection in the inner lining of your heart. The infection is most likely to affect your heart valves, which control the flow of blood through your heart by opening and closing.

Endocarditis is usually caused by germs called bacteria, although it can also sometimes be caused by a fungus, such as *Candida* (the fungus that causes thrush).

Normally, these germs pass through your heart without causing an infection. However, they are more likely to stay in your heart and multiply if you have an area that is damaged or irregular. For example, you have a higher chance of getting endocarditis if you:

- Have a heart valve that is damaged, or has been replaced with an artificial valve
- Have a heart defect
- Have had a heart transplant.

You also have a raised chance of getting endocarditis if you inject drugs and don't use a clean needle. This can allow germs to enter your bloodstream.

Other ways germs can get into your bloodstream include:

- Through your mouth, particularly if your teeth and gums aren't healthy
- From infections elsewhere in your body, such as skin infections

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- Through some types of dental and medical procedures. If your doctor thinks you have a high risk of getting endocarditis, he or she may recommend that you take medicines that kill bacteria (antibiotics) before certain procedures. However, not all doctors recommend this, as it's not clear whether it is helpful.

Endocarditis can affect people of any age, but about half of people who get it are over age 60. More men get endocarditis than women.

If you have endocarditis, it's important to get treatment as soon as possible, as the condition can cause serious problems throughout your body, including:

- Damage to your heart valves, leading to heart failure (this means your heart can't pump blood around your body as well as it should)
- The spread of the infection to other parts of your body
- Small clots or pieces of the infection breaking off, travelling through your bloodstream, and blocking blood flow to a part of your body, such as your lungs, heart, or brain. If blood flow to your brain is blocked, this can cause a stroke.

What are the symptoms?

The most common symptoms of endocarditis include:

- Fever and chills
- Night sweats
- A general feeling of being unwell (malaise)
- Tiredness (fatigue)
- Loss of appetite
- Weight loss
- Joint pain
- Weakness
- Headache
- Shortness of breath.

Less commonly, people get red, painful spots on the pads of their fingers or toes (called Osler nodes), or red patches on their palms or soles (called Janeway lesions).

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Doctors usually can't diagnose endocarditis based on symptoms alone. This is because many of the symptoms of endocarditis – such as fever and fatigue – can be caused by other illnesses, too.

To make the diagnosis, your doctor will consider whether you have a raised chance of having endocarditis (for example, if you have an artificial heart valve). You will also have tests, which will probably include:

- Blood and urine tests, including a series of blood tests (called blood cultures) to check for germs that can cause endocarditis. If you do have endocarditis, knowing what type of bacteria or fungus is causing the infection will help guide your treatment
- An ECG (electrocardiogram), which shows how your heart is beating
- An echocardiogram, which is an ultrasound scan to produce a picture of your heart.

What treatments work?

The main treatments for endocarditis are **medicines to kill the germs** that are causing the infection. About 50 in every 100 people also need **surgery** to completely remove the infected tissue and repair their heart.

Medicines to kill germs

Endocarditis is usually caused by bacteria. **Antibiotics** are medicines that kill bacteria. There are many different types of antibiotics, and you may be treated with more than one. Which antibiotic (or antibiotics) your doctor prescribes will depend on:

- What type of bacteria are causing your infection
- Whether the infection is affecting an artificial heart valve.

If your infection is caused by a fungus, you will instead be treated with medicines called **antifungals**.

Regardless of what treatment you have, you will probably have the medicine put directly into a vein through a drip (also called an intravenous infusion, or IV for short), or given through an injection.

Both antibiotics and antifungals can sometimes cause side effects, such as an upset stomach or a rash. Your doctor will carefully monitor how well these treatments are working and whether they are causing any problems.

Surgery

Many people with endocarditis need to have surgery. The goal of surgery is to remove all the infected tissue and repair the heart, which often involves repairing or replacing any affected heart valves. This will help your heart to recover and work normally again.

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All surgeries have risks, including the chance of bleeding and infection. Your healthcare team will discuss these risks with you.

Other treatments

If you are very ill, you will also have other treatments to help your body recover and to address any urgent problems. These treatments may include extra fluids provided through a drip (IV), help with breathing, and treatments to help with other problems, such as heart failure.

What will happen?

Many people recover from endocarditis. However, it's important to seek treatment as soon as possible, as endocarditis can sometimes cause serious problems, which can be fatal.

Once you've had endocarditis, you have a raised chance of getting it again. So it's important that you and those close to you know the symptoms, so you can seek treatment straight away.

If you have any questions or concerns, be sure to discuss these with your doctor.

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